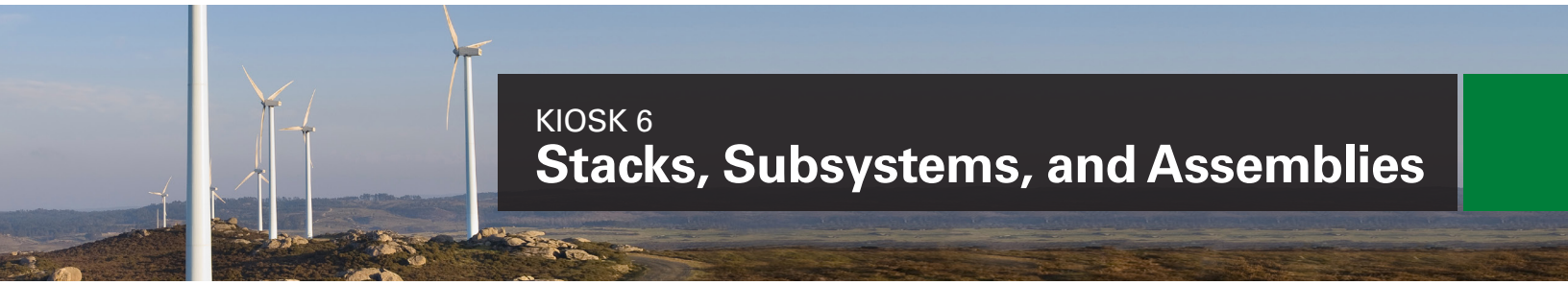
Littelfuse®

Expertise Applied | Answers Delivered



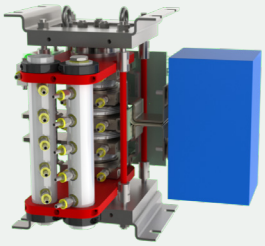
KIOSK 6

Stacks, Subsystems, and Assemblies

Designed and Delivered

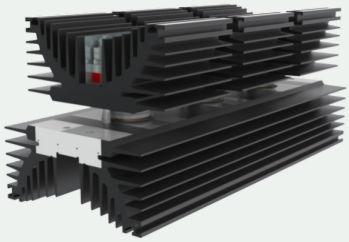
Design

- Full electrical, mechanical and thermal design to suit customer specification
- Modeling and simulation to optimize design and performance of Press Pack or module semiconductors in stacks
- Bipolar and IGBT stacks from 100s kW to 10s of MW
- Topologies from simple switches to integrated multi-level converters and HV pulse stacks



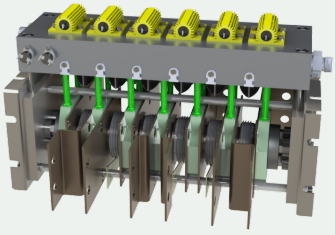
MMC

All IGBT stacks are fully customizable, using a pre-loaded pressure-contact isolated clamping system and direct water cooling for better heat dissipation. Using the IXYS PPIGBT, they incorporate a stable short-circuit mode and reduced explosion risk compared to standard module assemblies. The stacks are direct water cooled for effective heat dissipation and have integrated snubber circuits and optically fired gate-trigger units.



2 MW Phase

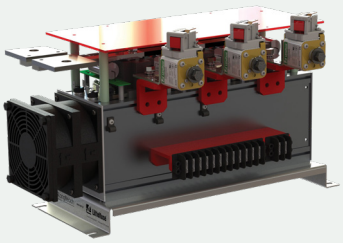
2MW natural air cooled AC/DC conversion assembly—section of six-phase connection parallel bridge (with IPT 120° conduction), with 750 V output voltage—fixing 3 pieces of rectifier diode type W3842MC280.



AC-DC Converter

A very compact 3 MW water-cooled AC/DC conversion assembly. Industrial input, line system voltage of 690 V @ 50 Hz—fixing 6 pieces of W3708MC320 rectifier diode.

This assembly utilizes a 3-point clamping system to ensure uniform and efficient force distribution across the entire device contact face. The aluminium-nitride insulated coolers allow the user to operate the stack with standard coolants without the need to implement expensive de-ionized water systems. Recent application on a semi-submersible crane vessel—offshore oil and gas technology.



Module Bridge

A bridge rectifier assembly outfitted with Littelfuse power modules and power fuses. Available in uncontrolled, half-controlled, and fully controlled varieties. An economical option with typical power ratings around 200 kW.